

U2D6_T_Simplifying Polynomials Part 2

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U2D6_T_Si
mplifying ...

U2D6 (Simplifying Polynomials Part 2)

Adding and Subtracting Polynomials

A. Adding Polynomials

When adding polynomials, remove the brackets then collect like terms to simplify.

Example 1: Simplify.

a) $(3x + 2) + (5x + 3)$

$$= \underline{3x} + \underline{2} + \underline{5x} + \underline{3}$$
$$= 8x + 5$$

b) $(-3n + 5) + (n - 4)$

$$= \underline{-3n} + \underline{5} + \underline{n} - \underline{4}$$
$$= -2n + 1$$

c) $(6r + 5) + (4r - 1) + (-3r - 2)$

$$= \underline{6r} + \underline{5} + \underline{4r} - \underline{1} - \underline{3r} - \underline{2}$$
$$= 7r + 2$$

Note: You cannot add the $8x$ with the 5 since they are not like terms... you may not simplify $8x + 5$ any further.

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B: Subtracting Polynomials

When subtracting polynomials, we add the opposite.

Opposites add to give 0.

So, the opposite of 5 is -5.

The opposite of $-4x$ is $4x$.

Example 2: State the opposite of each polynomial.

Polynomial	Opposite
$3x^2 + 2x - 1$	$-3x^2 - 2x + 1$
$-4x^3 + 2x^2 - 1$	$4x^3 - 2x^2 + 1$
$(-3r^2 + 4r + 6)$	$(3r^2 - 4r - 6)$

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Example 3: Simplify.

a) $(6r + 5) - (4r + 1)$

$$= (6r + 5) + (-4r - 1)$$

\swarrow adding \nwarrow the opposite of $(4r + 1)$

$$= \underline{6r} + \underline{5} - \underline{4r} - \underline{1}$$

$$= 2r + 4$$

b) $(4d - 1) - (-1 - 3d)$

$$= (4d - 1) + (1 + 3d)$$

$$= \underline{4d} - \underline{1} + \underline{1} + \underline{3d}$$

$$= 7d$$

c) $(6m^2 - 5mn - 5n^2) - (-6m^2 + 4mn - 7n^2)$

$$= (6m^2 - 5mn - 5n^2) + (6m^2 - 4mn + 7n^2)$$

$$= \underline{6m^2} - \underline{5mn} - \underline{5n^2} + \underline{6m^2} - \underline{4mn} + \underline{7n^2}$$

$$= 12m^2 - 9mn + 2n^2$$

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Adding and Subtracting Polynomials

Is $4 + 2r$ the same or different from $2r + 4$? ...

They are the same ... But, we usually write polynomials with the variable term first.

U2D6 HW: Page 157-158 #1-5, 6a